

MOVER

The World's first multi functional transport vehicle for air cargo units



Offers the world's first stand alone free movable multi functional transport vehicle which combines the skills of TV and ETV with numerous features which makes an powerful „Decathlete“ in Air Cargo Disciplines.

Latest Technology is in built and supported 24/7. The unit can be easily used in any kind of Terminal expansions or changes of operational procedures.

Consists of an Air Cargo Transporter frame and roller deck platform combined with scale, IT unit and lifting device including all related safety features for a reliable operation inside and outside of the terminal.



General Explanations

Features

It is a self contained cargo mover providing all features required for Unit Load (ULD) handling as a Truck Dock, as a Transfer and Elevating Transfer Vehicle as well as a Slave Pallet Mover and Dolly Dock. A Scale and Tag Printer plus an IT station are included as well for easy acceptance of the uld's at any of point of the terminal

- No installation is required for a fully operational system
- Safety for the handling of ULD's and the environment.
- Contains all features of an TV, ETV, Truck Dock, Dolly Dock, Slave Pallet Mover and a Terminal Input Station for ULD's
- Extremely flexible driving, programmable 90° turns and turning around its own center (turn table function) are examples of the highly agile vehicle movements.
- Hybrid Drive (Electric- and Diesel engine) ensures extremely low emissions inside the building. Batteries recharge during using diesel engine.
- Fully equipped drivers cabin, climate controlled and with IT and scale display allow for continuous ergonomic usage
- Various versions are available for different heights (up to three levels) and different lengths

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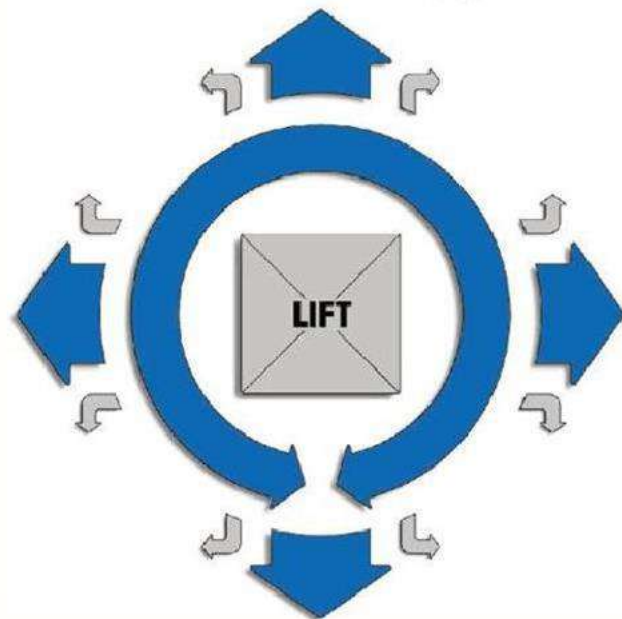
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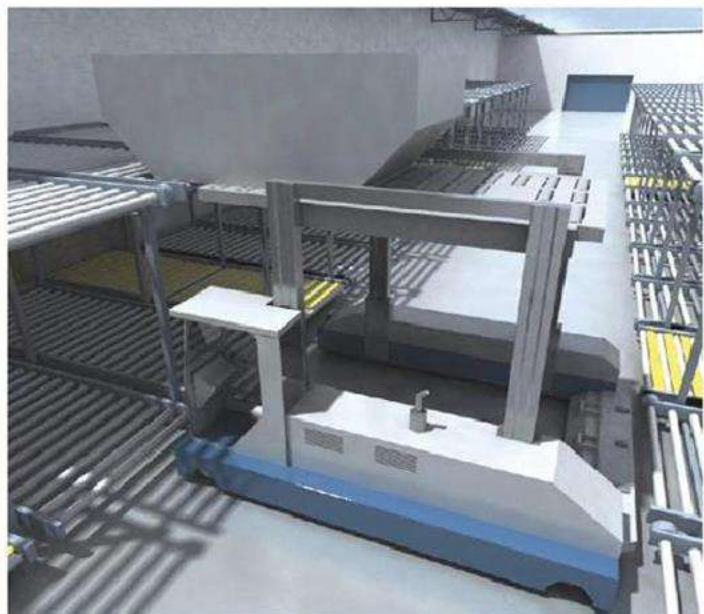
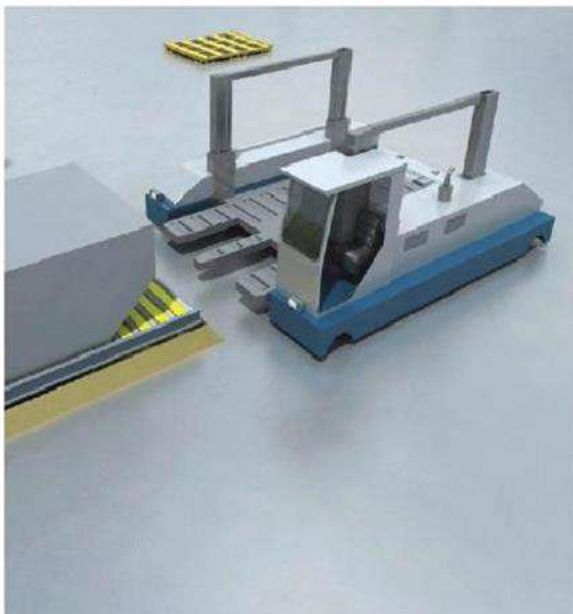
Benefits

- Low cost compared to conventional ETV system
- Saving of installation and commissioning time and cost for a fully functional System
- Highly flexible configuration of ULD storage racks is feasible (no aisle configuration is required).
- Robust engineering for reliable operation even in extreme environments.
- Increased reliability, availability and flexibility allows for high utilisation factor throughout the terminal facility.
- The truck is equipped with an electronic, programmable multidirectional steering system which allows millimetre accurate driving.
- Easy maintainability as the vehicle can be removed to a designated maintenance area outside the handling area.
- Designed and Supplied by one of the worlds leading Cargo Handling System Integrators
- Multi - Functionality and flexibility together with the low investment creates a clear win-win situation for operations and return on investment.



Performance

- Includes all functions required for a safe operation as a Elevating Transfer Vehicle, Transfer Vehicle, Truck Dock, Dolly Dock, Slave Pallet Mover and Input/Output Station. Including the data transfer via IT Terminal and Scale (stamped)
- Functionality available as 10ft, 15ft and 20ft vehicle for one up to three levels.
- Mobility by using a Hybrid Engine. The batteries provide power for a complete shift inside use without being charged
- An automatic use of a vehicle in an aisle can be provided if so desired.



Configuration Basic Unit

Configuration Basic Unit	10-15 econ	10-22	10-42	10-42 ETV	10-70 ETV	15-22	15-42	15-42 ETV	15-70 ETV	20-22
Lift in mm	1500	2200	4200	4200	7000	2200	4200	4200	7000	2200
Container dimension in ft	10					15				20
Carrying capacity in kg	7000									14000
Electronic engine (without battery and charger)	●		●	●	●	●	●	●	●	●
Platform usable for Slave pallet use (200mm TOF)*	●	●	●	-		●		-		-
Platform for ULD not for slave pallet use (508mm TOF)*	-	●	-	●	-	-	●	●	-	●
Through loading capacity	●	-	●	●	●	●	●	●	●	●
Slave pallet handling unit with friction rolls	●	●	●	-	-	●	●	-	-	-
retaining stops	●	●	●		●		●		●	
Return pulley at the platform	●	●	●	●	●	●	●	●	●	●
Drivers cab with Overhead guard , front, load and rear side with grid , drivers side open, clearly arranged control unit, driver's seat	●	●	●	●	-	●	●	●	-	●
Load attendant workstation	-	-	-	●	●	-	-	●	●	-
Camera system, containing 1 front camera and 1 rear camera, switchable with the travel direction switch	●	●	●	●	●	●	●	●	●	●
2 mirrors	●		●		●		●		●	
Basic personal protection system	●	●	●	●	●	●	●	●	●	●
Batteries and Chargers		●		●		●		●		●
Battery 80V 465Ah in 1 isolated steel container, container dimension: L=1350xB=435xH=785 mm	○	-	-	-	-	-	-	-	-	-
Battery 80V 620Ah EUW** in 2 isolated steel container, container dimension: L=1610xB=435xH=785 mm	○	○	○	-	-	○	○	-	-	○
Battery 80V 1240Ah EUW** in 2 isolated steel container, container dimension: L=1610xB=435xH=785 mm	-	-	-	○	○	-	-	○	○	-
Backup Battery 80V 620Ah EUW** in 2 isolated steel container, container dimension: L=1610xB=435xH=785 mm	-	○	○	-	-	○	○	-	-	○
Backup Battery 80V 1240Ah EUW** in 2 isolated steel container, container dimension: L=1610xB=435xH=785 mm	-	-	-	○	○	-	-	○	○	-
Battery exchange device	○	○	○	○	○	○	○	○	○	○
Charger 80V 90A for 465Ah Battery charging time 11-13 hours	○	-		-		-		-		-
Charger 80V 90A for 600Ah Battery charging time 11-13 hours	○	-	-	-	-	-	-	-	-	-
Charger 80V 110A with EUW** charging time 11-13 hours	-	○	○	-	-	○	-	-	-	○
Charger 80V 200A with EUW** charging time 11-13 hours	-	○			-	-	○		-	-

* Platform is equipped with a roller conveyor, proportional electro-hydraulic driven, friction rolls with a profiled Baytec® 75°ShA coating. The lifting is infinitely height adjustable (TOF to max. height), platform lift proportional hydraulic controlled. The transfer point of the platform are straight and equipped with a hydraulic extended and retracted stops.

** EUW = Air pumped into the battery thoroughly mixes the battery acid. The advantage: faster charging and less servicing work through lower water consumption.

• Included ○ Option - Not available

Options

	10-15 econ	10-22	10-42	10-42 ETV	10-70 ETV	15-22	15-42	15-42 ETV	15-70 ETV	20-22
Platform with pockets and retraction pin for safety stop at the Dolly	o	o	o	-	-	o	o	-	-	o
Electrical preselection of 508 mm, handover Dolly	o		o	-	-	o	o	-	-	o
Lift limiter	o	o	o		o		o		o	
Hydraulic system up to -20° (-4°F)	o	o	o	o	o	o	o	o	o	o
Hybrid drive (diesel/electro) incl. 40 L diesel tank	o	o	o	o	o	o	o	o	o	o
Additional 100L diesel tank incl. electrical monitoring with plug-in coupling and magnetic valve	o	o	o	o	o	o	o	o	o	o
Drivers cab, front-, load- and rear side with safety glass, drivers side open, incl. Wiper	o	o	o	-	-	o	o	-	-	o
Closed drivers cabin with drivers load guard/ front-, load- and rear side with safety glass/ drivers side with sliding window/ door re-movable/ 1000W heater thermostat-controlled/ wiper/ lightning unit	o	o	o	-	-	o	o	-	-	o
Removable windows	o	o	o	-	-	o	o	-	-	o
Electrical lighting containing of: H4 halogen headlights with high and low beam, direction indicator, reverse driving light, flashing warning lights, brake light	o	o	o	o	o	o	o	o	o	o
2 x Working light front	o		o		o		o		o	
2 x Working light rear	o	o	o	o	o	o	o	o	o	o
Comfort seat with seat heating and adjustable lumbar support	o	o	o	o	o	o	o	o	o	o
Radio/CD	o	o	o	o	o	o	o	o	o	o
Weighing system for weighing of ULDs incl. work verification	-	o		o		o		o		o
Printer for weighing system	-	o	o	o	o	o	o	-	-	-
Advanced personal protection system	o	o	o	o	o	o	o	o	o	o
Wireless data transmission										
Electrical collisions detection with acoustic signal and display indication in the drivers cabin	o	o	o	o	o	o	o	o	o	o
Maintenance Package	o		o		o		o		o	
Spare parts package small	o	o	o	o	o	o	o	o	o	o
Spare parts package big	o	o	o	o	o	o	o	o	o	o
Start up, briefing and training	o	o	o	o	o	o	o	o	o	o

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Fully equipped drivers cabin with touch screen control



Comfort seat with seat heating and adjustable lumbar support



Camera system, containing 1 front camera and 1 rear camera



Hybrid drive (diesel/ electro)



Electronic programmable four wheel steering system



Platform with pockets and retraction pin for safety stop at the Dolly



Batteries provide power for a complete shift



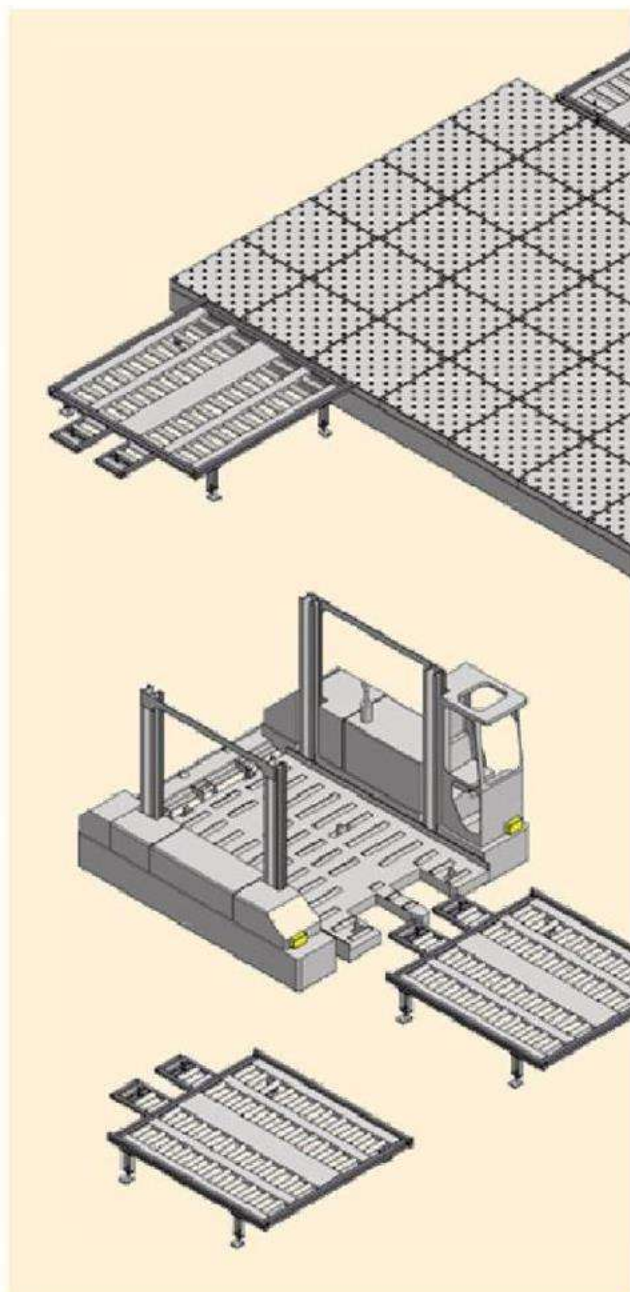
Battery charger

Technical Specifications

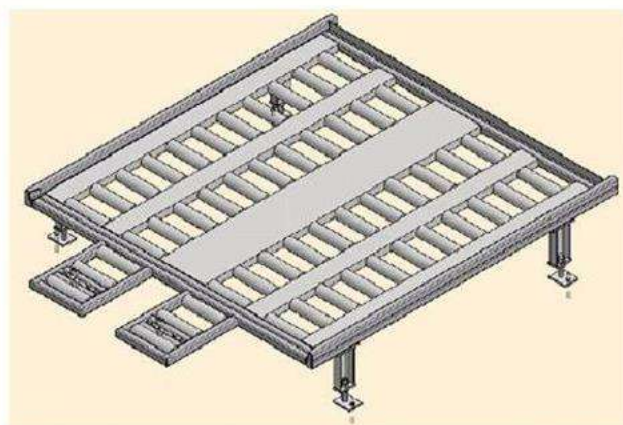
		Model 10-15econ	High Performance models 10-xx (ETV) 15-xx (ETV) 20-xx
Main Dimensions	L = Frame Length	ca. 4500 mm	
	B = Frame Width	ca. 3890 mm	
Drivers Cabin	Sh = height over overhead guard	ca. 2550 mm	
Effective Area		B = 2450 x L = 3250 mm	
Platform Lift	h3 Lift	1500 mm	2200 mm
	h1 Collapsed Height	2950 mm	
Turning Radius		2950 mm + legal safety margin	
Working aisle width		3890 mm + legal safety margin	
Drive	electric / hybrid (optional)	Electric / Diesel	
Steering system		Hydraulic	Electric
Wheel Type	front	Vulkollan®	
	rear	Vulkollan®	
Wheel (x= driven)	front / rear	4 / 2x	
Wheel dimension	front / rear	Ø 406 mm / Ø 406 mm	
Wheel distance	length	ca. 3500 mm	
	width	ca. 3200 mm	
Ground clearance		ca. 150 mm	
Entrance step height	step	380/750 mm	
Stability	according to EU standards	Yes	
Driving speed	with / without load	ca. 8/9 km/h	ca. 9/15 km/h
Lift speed	with / without load	ca. 0,23 m/s	
Lowering speed	with / without load	ca. 0,23 m/s	
Roller conveyer	with / without load	ca. 0,25 m/s	
Gradeability	with / without load	ca. 5%	
Net weight	including battery	ca. 9.900 kg	ca. 10.500 kg
Floor loading	including rated load	ca. 1300 kg/m²	
Wheel load		ca. 55 kg/cm²	
Service brake	electric motor brake	with electric motor	
Parking brake	electro-magnetic brake	with electro magnetic brake	
Battery	voltage/ capacity	80V / 465 Ah	80V / 620 Ah
Diesel engine (optional)	power	20 kW	
Electro engine	drive motor	2 x 7.5 kW	
	steering and lift motor	28 kW	
Control unit	alternating current (AC)	AC - control	
Drive control mechanism	AC	infinite travel speed control	
Steering system	four-axle-steering	electric	
operating pressure		ca. 180 bar	

EQUIPMENT

EQUIPMENT



Storage Roller Deck NEL

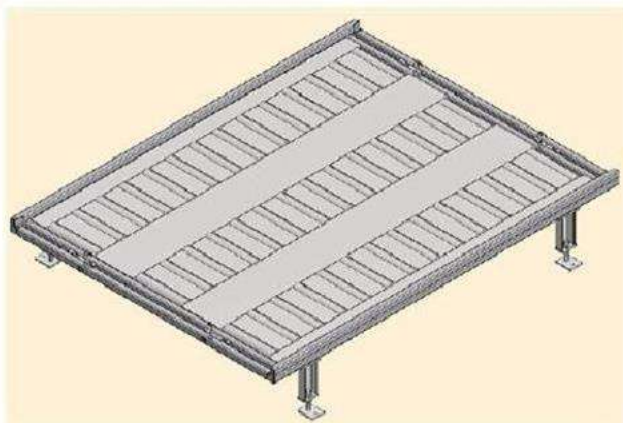


Load capacity	6.800 kg/ 10' ULD's
Height (with substructure)	508 mm
Length	3482 mm
Width	2750 mm
Width between guides	2540 mm
Guide height	50 mm
Centre to centre distance of roller	235 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	50
Walkways	1
External actuated stop	1 pair
Fixed stop	1

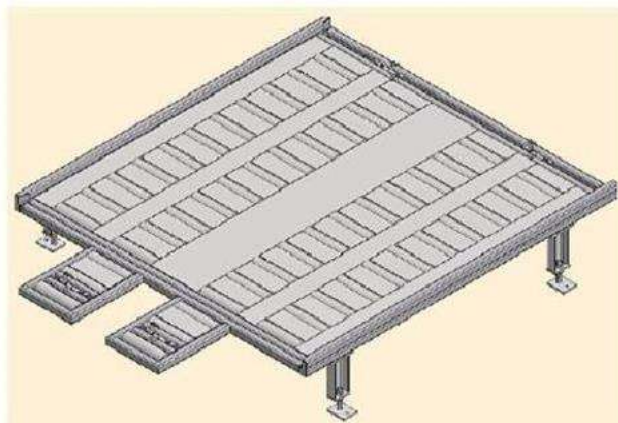
EQUIPMENT

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Dolly Docking Roller Deck



Docking Deck



Load capacity	6.800 kg/10' ULD's
Height (with substructure)	508 mm
Length	3482 mm
Width	2750 mm
Width between guides	2540 mm
Guide height	50 mm
Centre to centre distance of roller	235 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	42
Number of tread plates between rollers	39
Walkways	2
Manually operated stop	2 pair

Load capacity	6.800 kg/10' ULD's
Height (with substructure)	508 mm
Length	3482 mm
Width	2750 mm
Width between guides	2540 mm
Guide height	50 mm
Centre to centre distance of roller	235 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of tread plates between rollers	46
Walkways	1
Manually operated stop	1 pair
External actuated Stop	1 Pair

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Pallet Mover ESG 7700

The ESG 7700 is designed to accommodate ULDs with base plate sizes up to 10ft (125" x 96"). It does the handling between the floor locations of the slave pallets, where the system height is 203 mm (8") and transfer positions at stationary ULD handling equipment, where the system height is 508 mm (20"). Batteries are the source of power for the pallet mover.



Technical Specifications

Pallet Mover ESG 7700	
Main use	Transport of Slave Pallets with ULD of base plate up to 10 ft
Lifting height (workable)	203 mm - 508 mm
Load capacity	7.000 kg
Driving speed	0 - 10 km/h
Lifting speed	25 mm/sec
Battery (voltage/ capacity)	48 V / 560A
Charging time	max. 8h

Technical Specifications

Load platform

- Transfer from/to the slave pallet is narrow edge leading while the slave pallets shall be transported with the wide edge leading.
- The slave pallets are carried on sturdy fork tines, which can be lowered and lifted to interface with the 508 mm (20") system height of fixed ULD handling equipment and the 203 mm (8") of the slave pallets. Lifting is accomplished by a hydraulic lifting unit. The load is 6,800 kg plus the weight of the slave pallet.

Vehicle

- The vehicle runs on rubber wheels which are located so that the unit provides an even floor load distribution and minimizes point loads. The vehicle body contains the electric drive unit with power steering, the hydraulic lifting unit, the battery, ergonomic control elements and an adjustable seat.

Battery

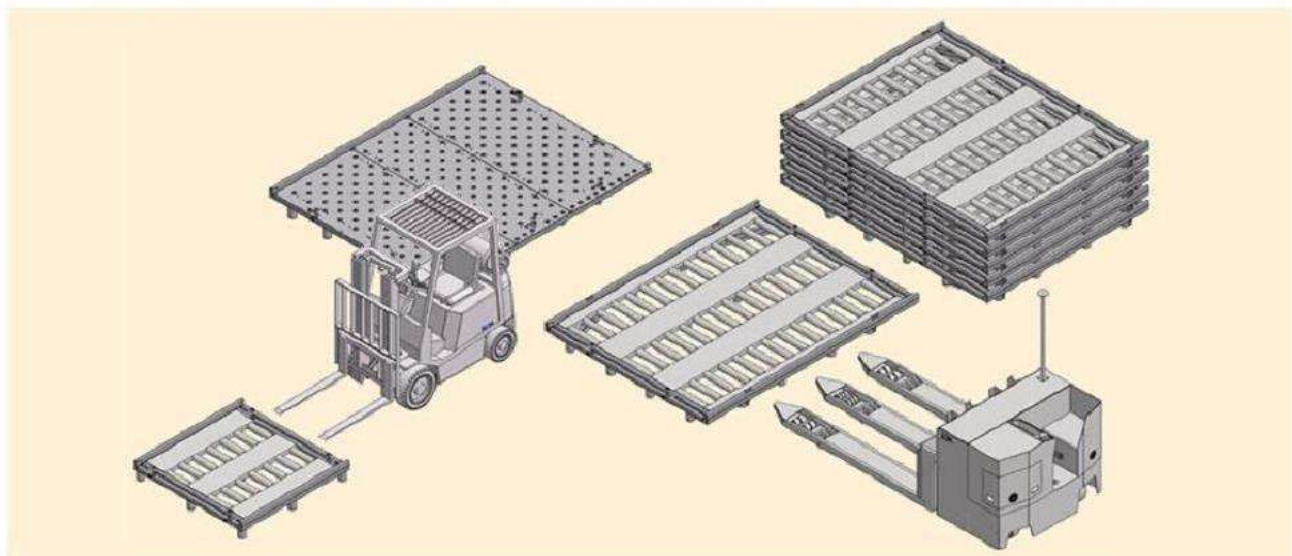
- The battery has a voltage of 48 V and a capacity of 560 Ah and provides sufficient capacity to operate for up to 10 hours based on 10 cycles per hour, under full loading. The cycles include lifting, lowering and a travelling distance of 100 m. The battery is supported by a roller deck inside the vehicle body for easy exchange. Battery charging time does not exceed 1 shift of 8 hours. For safety reasons the stop for the battery is interlocked with the drive unit

Safety features

- Dead-man control located below the seat
- Emergency stop
- Horn & Signal light

Color

The standard is orange RAL 2004, anthracite RAL 7016 (or to be agreed).



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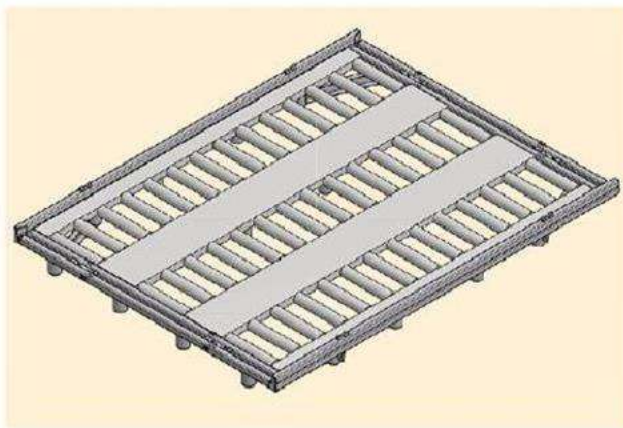
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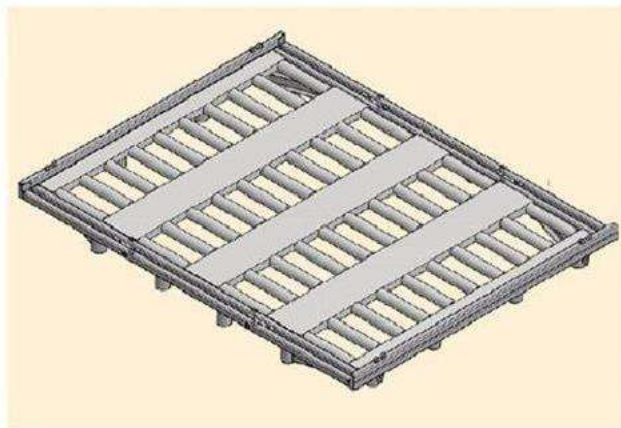
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EQUIPMENT

Slave Pallet NEL – ESG 7700



Slave Pallet WEL – ESG 7700

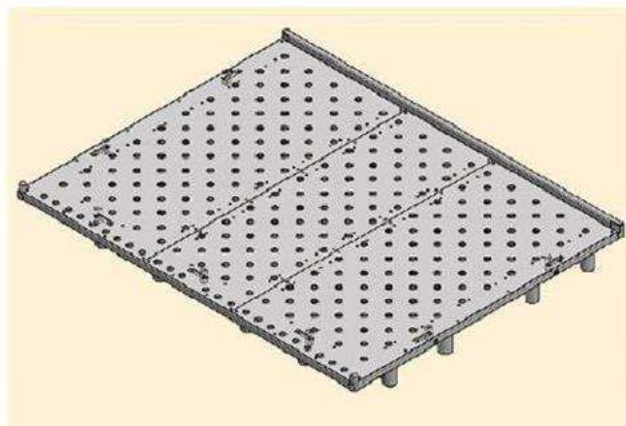


Load capacity	6.800 kg/ 10' ULD's
Height	203 mm
Length	3482 mm
Width	2750 mm
Width between guides	2540 mm
Guide height	50 mm
Centre to centre distance of roller	235 mm
Roller (diameter x length)	ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	42
Walkways	2
Manually operated stop	2 pair

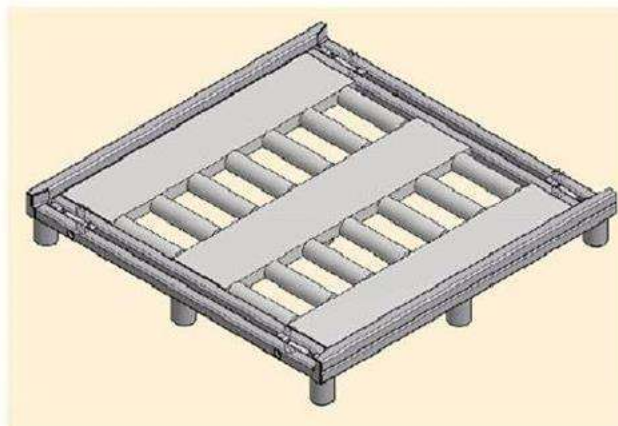
Load capacity	6.800 kg/ 10' ULD's
Height	203 mm
Length	2660 mm
Width	3490 mm
Width between guides	3280 mm
Guide height	50 mm
Centre to centre distance of roller	250 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	40
Walkways	3
Manually operated stop	2 pair

EQUIPMENT

Slave Pallet RA - ESG 7700



Slave Pallet LD - ESG 2500



Load capacity	6.800 kg/ 10' ULD's
Height	203 mm
Length	3482 mm
Width	2780 mm
Guide height	50 mm
Ball units	32 / m2
Width from centreline to centreline	180 mm
Ball Diameter	ø 30 mm

Load capacity	1.600 kg / LD's
Height	203 mm
Length	1780 mm
Width	1780 mm
Width between guides	1660 mm
Guide height	50 mm
Centre to centre distance of roller	225 mm
Roller (diameter x length)	Ø 80 x 360 mm
Wall thickness of roller	3 mm
Number of rollers	14
Walkways	3
Manually operated stop	2 pair

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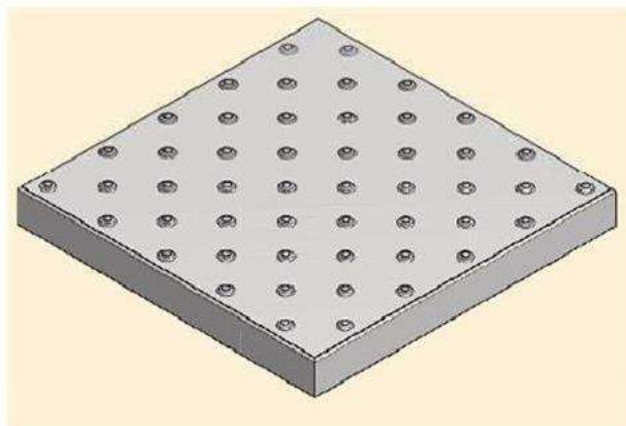
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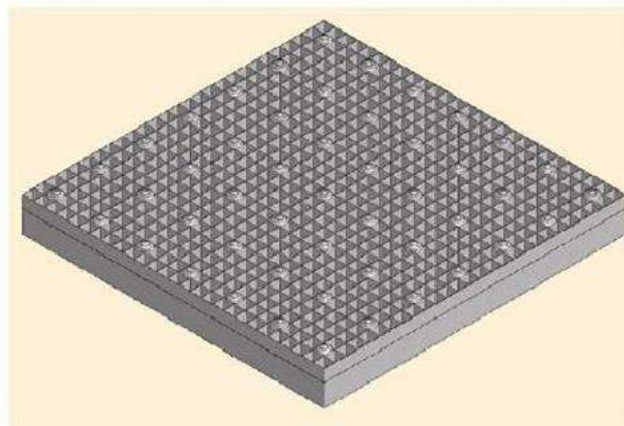
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STATIONARY EQUIPMENT

Ball Mat Module (Standard)



Ball Mat Module (Grating)

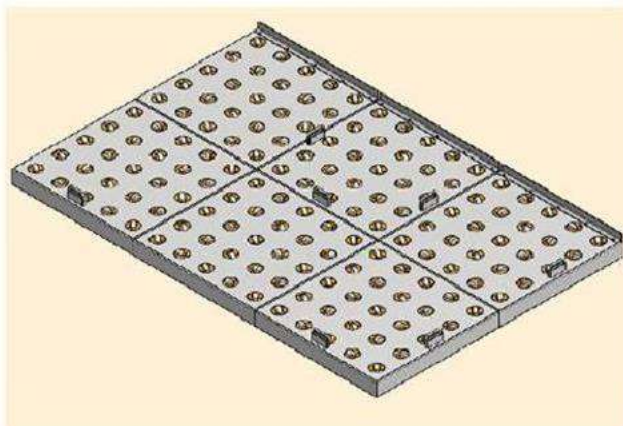


Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	1270 mm
Width	1270 mm
Ball units	32 / m ²
Width from centreline to centreline	180 mm
Ball Diameter	Ø 30 mm

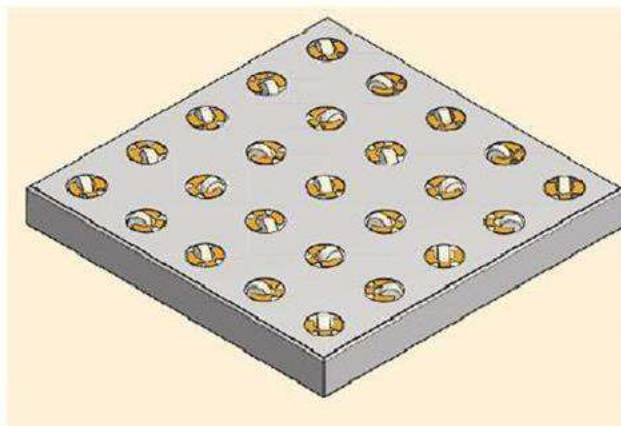
Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	1270 mm
Width	1270 mm
Ball units	32 / m ²
Width from centreline to centreline	180 mm
Ball Diameter	Ø 30 mm

STATIONARY EQUIPMENT

Swivel Castor Section



Swivel Castor Module

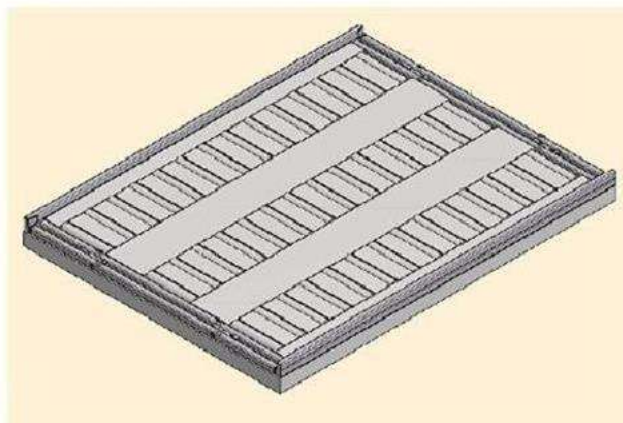


Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Dimension of moduls	1270 x 1270 mm
Guide height	50 mm

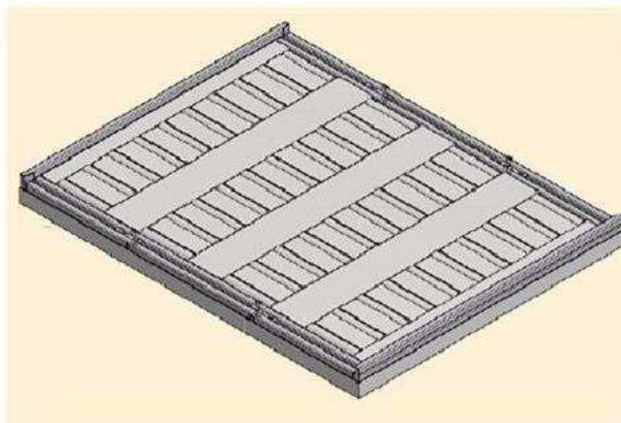
Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	1270 mm
Width	1270 mm
Swivel castor roller	16 / m ²
Width from centreline to centreline	250 mm
Roller Diameter	Ø 70 mm

STATIONARY EQUIPMENT

Fixed Work Station NEL



Fixed Work Station WEL

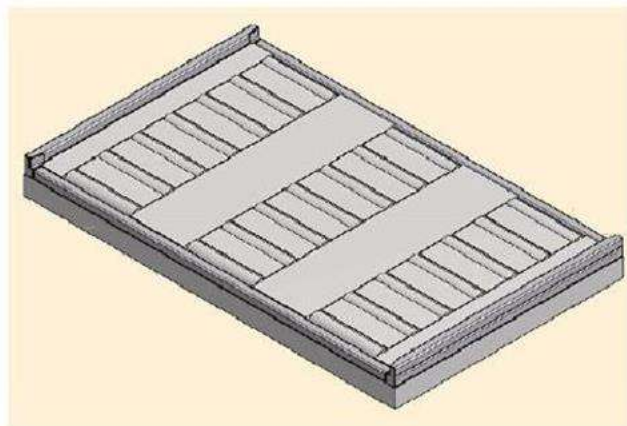


Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	3482 mm
Width	2750 mm
Width between guides	2540 mm
Guide height	50 mm
Centre to centre distance of roller	235 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	42
Number of tread plates between rollers	39
Walkways	2
Manually operated stop	2 pair

Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	2660 mm
Width	3490 mm
Width between guides	3280 mm
Guide height	50 mm
Centre to centre distance of roller	250 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	40
Number of tread plates between rollers	36
Walkways	3
Manually operated stop	2 pair

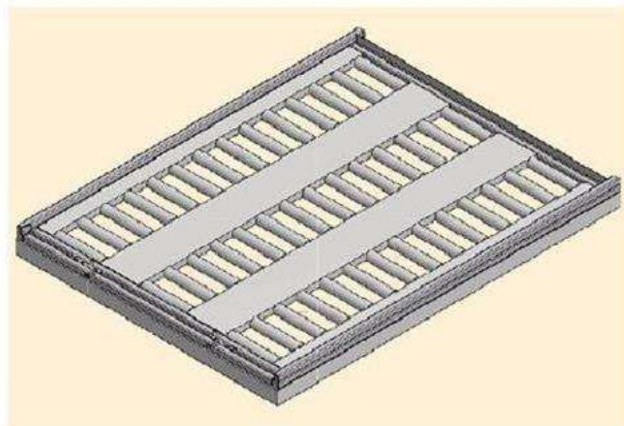
STATIONARY EQUIPMENT

Spacer NEL



Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	1640 mm
Width	2750 mm
Width between guides	2540 mm
Guide height	50 mm
Centre to centre distance of roller	235 mm
Roller (diameter x length)	ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	21
Number of tread plates between rollers	18
Walkways	2

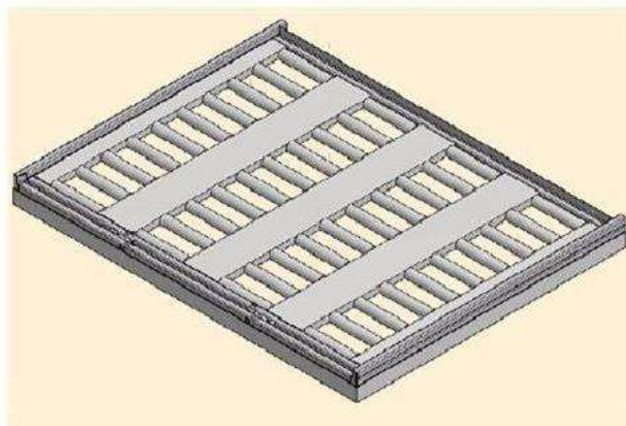
Storage Roller Deck NEL



Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	3482 mm
Width	2750 mm
Width between guides	2540 mm
Guide height	50 mm
Centre to centre distance of roller	235 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	42
Walkways	2
Manually operated stop	1 pair
Fixed stop	1

STATIONARY EQUIPMENT

Storage Roller Deck WEL

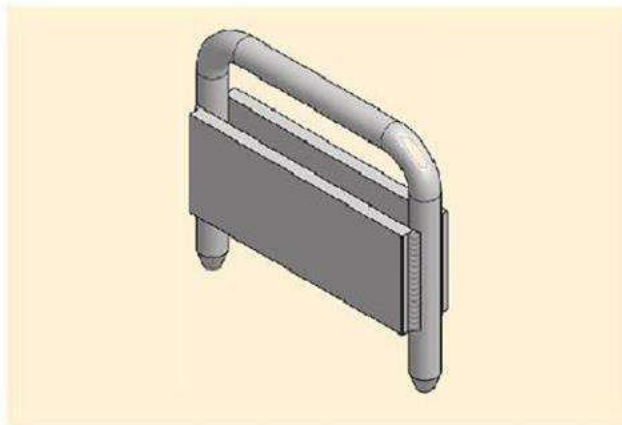


Fixed Stop



Load capacity	6.800 kg/ 10' ULD's
Height (basic)	203 mm
Height (with substructure)	508 mm
Length	2660 mm
Width	3280 mm
Width between guides	3490 mm
Guide height	50 mm
Centre to centre distance of roller	250 mm
Roller (diameter x length)	Ø 80 x 480 mm
Wall thickness of roller	3 mm
Number of rollers	40
Walkways	3
Manually operated stop	1 Pair
Fixed stop	1

Manual Stop



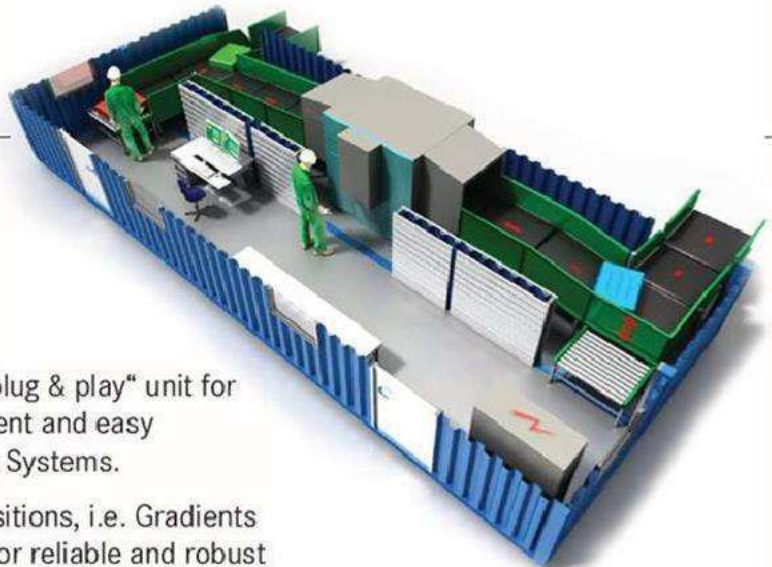
The World's first "Plug & Play" X-Ray solution

Developed the world's first stand alone „plug & play“ unit for flexible CBS, controlled internal environment and easy connectivity to existing Baggage Handling Systems.

Can be placed in internal and external positions, i.e. Gradients or uneven positions and will be available for reliable and robust performance within hours after positioning and connecting to local power.

Latest detection technology is inbuilt and supported 24/7 all year. The Unit can be easily relocated to suit any kind of terminal expansions or changes.

Consists of two containerised units fully equipped and furnished for industrial and office use, including all safety and security required for persons working within this environment.



General Explanations

Features

- It is a factory produced integrated CBS system designed to meet the most exacting security and quality standards
- Ready to perform within hours of delivery
- Fully finished interior provides a quality screening working environment.
- Fully weather proofed for external locations
- Includes all lighting, furnishings, climate control and fire detection systems
- Easily levelled on gradients or uneven ground
- Simple plug-in to airport electrical supply and telecoms networks
- Can be used off-line or connected direct to existing baggage systems
- Easily relocatable to suit future development requirements

**"Plug & Play", Factory Produced,
Pretested, Cost Efficient, Easy to
Integrate**

Technical Specifications Benefits

- A truly turnkey CBS system guaranteed to be right first time
- Low cost compared to conventional one-off CBS systems
- Minimal impact on existing airport infrastructure
- Shortest possible programme to an operational CBS
- Existing baggage processes can be retained until ready to switch over
- Pre-tested to ensure full function and performance from first use
- Includes 24 hour remote monitoring and technical support
- Robust engineering for reliability and longevity even in the most extreme environments
- Increased reliability and availability

- Designed and manufactured in Germany by one of the world's leading baggage handling and checked bag screening integrators

Performance

- Includes an in-line advanced technology, multi-view automated explosive detection system approved for use in CBS systems by the UK DfT and Avsec regulators around the world
- Designed to process up to 750 bags per hour
- Combined level 2/3 operator workstation included
- Additional workstation can be located remotely for combining manpower with other/existing security roles

